



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,693	02/04/2004	Edward Hosung Park	03-0050	3943

29293 7590 03/21/2006

FREUDENBERG-NOK GENERAL PARTNERSHIP
LEGAL DEPARTMENT
47690 EAST ANCHOR COURT
PLYMOUTH, MI 48170-2455

EXAMINER

NUTTER, NATHAN M

ART UNIT PAPER NUMBER

1711

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Cont

Office Action Summary

Application No.

10/771,693

Applicant(s)

PARK, EDWARD HOSUNG

Examiner

Nathan M. Nutter

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 15-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1711

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I, claims 1-14, in the reply filed on 5 January 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

It is noted that while applicant indicates that claims 15-49 have been cancelled, this is not so. An amendment must be filed indicating the claims as cancelled.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-58 of copending Application No. 10/813,527. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter of the claims of the copending application may embrace the instantly claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya et al (US 5,354,811), cited by applicant.

The reference to Kamiya et al teaches the manufacture of a moldable polymer composition wherein a mixture of thermoplastic material and a curable fluorocarbon elastomer is made at a temperature above the melting point of the thermoplastic with the addition of a curing composition and a cross-linking agent to the mixture, and heating while continuing to mix the mixture and the curing composition. Note the Abstract, column 2 (lines 17-28) and the examples at column 6 (lines 5 et seq.). The initiator disclosed at column 6 is "Perbutyl P TM" from (Nisson Oil and Fat) which as

Art Unit: 1711

taught by Sugiura et al (US 2005/0288434) is α,α' -bis(t-butylperoxydiisopropyl)benzene, which is taught as suitable at paragraph [0067] of the instant Specification. The initiator of Kamiya et al would be expected to have the same "half-life of 0.1 hours or more at a temperature of about 180°C or higher (claims 1, 2 and 3). The thermoplastic is taught to be fluorine-containing (claim 4) at column 2 (lines 43-53). The employment of a cure-site monomer is taught at column 3 (lines 31-64) and includes those disclosed in paragraph [0040] of the Specification. The cure-site monomer is taught to be included with the fluorine containing monomers recited at column 3 (lines 53-64). At column 7 (lines 40-42) the reference teaches the specific use of a polymer of tetrafluoroethylene and propylene (claim 11). The examples show the heating temperatures to be within those recited in claims 12-14.

Claims 1-3 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakai et al (US 5,206,293), cited by applicant.

The patent to Sakai et al shows the claimed method comprising the steps of melt-mixing a thermoplastic material and a curable fluorocarbon elastomer, adding a curing composition and crosslinking agent to the mixture, and heating while continuing to mix the mixture and the curing composition at the Examples at column 6 (line 63) to column 8 (line 2). The employment of an initiator of α,α' -bis(t-butylperoxy)-p-diisopropylbenzene, as listed in paragraph [0067] of the instant Specification, would inherently embrace the concept of half-life and the recitations of claims 2 and 3. The initiators listed at the paragraph bridging column 2 to column 3 include many disclosed herein as

suitable. Since the reference is using a fluororubber, the recitation of claim 10 is met, as well.

Claims 1-4, 6, 10 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al (US 6,310,141), cited by applicants.

The patent to Chen et al shows the manufacture of a moldable polymer composition wherein a mixture of thermoplastic material and a curable fluorocarbon elastomer is made at a temperature above the melting point of the thermoplastic with the addition of a curing composition and a cross-linking agent to the mixture, and heating while continuing to mix the mixture and the curing composition. Note column 6 (lines 35-61) and the Examples. The patent teaches initiators and cross-linking agents at column 4 (lines 30-45). The initiators embrace those disclosed herein at paragraph [0067] and would be expected to have the same "half-life of 0.1 hours or more at a temperature of about 180°C or higher (claims 1, 2 and 3). Note column 4 (lines 30-46). The thermoplastic is taught to be fluorine-containing (claim 4) at the paragraph bridging column 1 to column 2 and column 2 (lines 31-38). The reference teaches the use of cure-site monomers in conjunction with vinylidene fluoride, tetrafluoroethylene and hexafluoropropylene at column 2 (lines 10-19) for the fluorine-containing monomers and (lines 20-29) for the cure-site monomers (claim 6). Since the reference is using a fluororubber, the recitation of claim 10 is met, as well. The processing temperatures (claims 12-14) are taught at column 6 (lines 35-61).

Claims 1-5, 10 and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Pazos et al (EP 0 168 020), cited by applicants.

Pazos et al (EP 0 168 020) show the contemplated process at "Procedure for Examples 1 to 7" at page 3 (lines 51 et seq.) which includes the melt-mixing, addition of curing agents with further mixing with curing of the copolymer recited in claim 5. Note the paragraph bridging page 2 to page 3 for the specific terpolymer. The thermoplastic resin of claim 4 is taught at page 2 (lines 48-52). At page 3 (lines 17-23), the reference shows the use of 2,5-dimethyl-2,5-di*tert*butylperoxyhexyne-3, as disclosed herein at paragraph [0067]. As such, the half-life would be as recited and claimed herein. The heating temperatures of claims 11-14 are taught in the Procedure of page 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya et al (US 5,354,811), cited and for the reasons set out above.

The reference to Kamiya et al shows essentially what is recited for the broad claims. The inclusion of a terpolymer of vinylidene fluoride/hexafluoropropylene with a cure-site monomer would be obvious from the recitations at column 3 (line 31) to

Art Unit: 1711

column 4 (line 9) wherein the copolymers include the cure-site monomers, as recited.

The inclusion of the cure-site monomer with the other fluorine-containing monomers, as recited in claims 6-9 would be obvious choices to an artisan in view of those teachings, as well. The other features claimed regarding vulcanization temperatures of claims 11-14 are set out in the examples. As such, the invention of the instant claims would have been prima facie obvious to an artisan at the time the invention was made from the teachings of Kamiya et al. Nothing unexpected has been shown on the record.

Claims 1-3 and 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al (US 5,206,293), cited and for the reasons set out above.

The reference to Sakai et al shows essentially what is recited for the broad claims. The reference teaches the fluororubber constituent to be made from the monomers contemplated herein, and may include ethylene, propylene, diene compounds (disclosed herein as cure-site monomers) and chlorine-, bromine- or iodine-containing compounds (also herein as cure-site monomers). The choices of monomers, clearly within the skill of an artisan with a view toward desired characteristics of the final product, availability of constituents, cost-advantages, etc. would embrace those recited in instant claims 5-9 and 11. The inclusion of the cure-site monomer(s) with the other fluorine-containing monomers, would be obvious choices to an artisan in view of those teachings, as well. The other features claimed regarding vulcanization temperatures of claims 11-14 are set out in the examples. As such, the invention of the instant claims

would have been prima facie obvious to an artisan at the time the invention was made from the teachings of Sakai et al. Nothing unexpected has been shown on the record.

Claims 1-7, 10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al (US 6,310,141), cited and for the reasons set out above.

The reference to Chen et al shows essentially what is recited for the broad claims. The choice of monomers for the fluororubber, as recited in claims 5 and 7 would have been obvious in view of column 3 (lines 18-36) which teaches other fluorine containing monomers employed in fluoroelastomer production. As such, the invention of the instant claims would have been prima facie obvious to an artisan at the time the invention was made from the teachings of Chen et al. Nothing unexpected has been shown on the record.

Claims 1-3, 5, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al (US 5,962,589), newly cited.

The reference to Matsumoto et al teaches the manufacture of a moldable polymer composition wherein a mixture of thermoplastic material and a curable fluorocarbon elastomer is made at a temperature above the melting point of the thermoplastic with the addition of a curing composition and a cross-linking agent to the mixture with subsequent curing of the composition. Note the Abstract, column 6 (lines 4-9) and the examples at column 8 (lines 60 et seq.). The initiators disclosed at the paragraph bridging column 4 to column include many disclosed herein at paragraph [0067] and would be expected to have the same "half-life of 0.1 hours or more at a

Art Unit: 1711

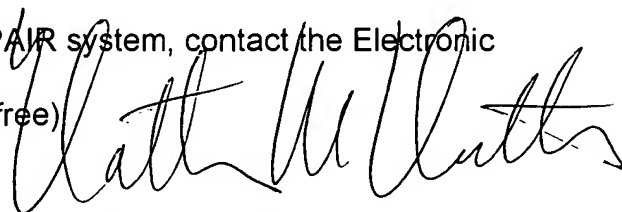
temperature of about 180°C or higher (claims 1, 2 and 3). The process of mixing is well-known, as shown by the references cited above. The process, as recited, is not excluded and would be obvious to a skilled artisan. Adding the initiators too early in the process leads to unwanted reaction as is widely known to rubber artisans. As such, the invention of the instant claims would have been prima facie obvious to an artisan at the time the invention was made from the teachings of Matsumoto et al. Nothing unexpected has been shown on the record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan M. Nutter whose telephone number is 571-272-1076. The examiner can normally be reached on 9:30 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Nathan M. Nutter', is written over the text of the paragraph.

Nathan M. Nutter
Primary Examiner
Art Unit 1711

nmn

19 March 2006